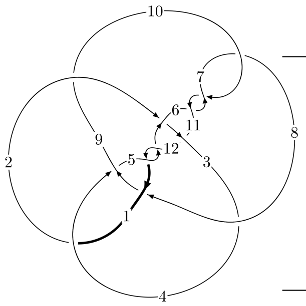
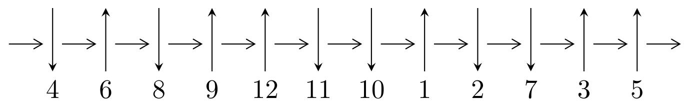
$12a_{0897}$ $(K12a_{0897})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$6,11 \xrightarrow[c_6]{} 3,7 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_2]{} 2 \xrightarrow[c_5]{} 5 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_7]{} 8 \xrightarrow[c_9]{} 9 \xrightarrow[c_4]{} 4 \twoheadrightarrow c_1, c_3, c_8$$

Ideals for irreducible components[2]of $X_{\mathbf{par}}$

$$\begin{aligned}
I_1^u = \langle & 57881957452448u^{41} + 869354193740770u^{40} + \cdots + 352956820712976b - 13155101208038300, \\
& 1.31551 \times 10^{16}u^{41} + 1.76547 \times 10^{17}u^{40} + \cdots + 1.26711 \times 10^{16}a - 8.53632 \times 10^{17}, \\
& u^{42} + 15u^{41} + \cdots - 7744u - 359\rangle \\
I_2^u = \langle & -1.04951 \times 10^{13}a^5u^{14} + 2.29419 \times 10^{15}a^4u^{14} + \cdots - 1.07487 \times 10^{15}a - 3.31910 \times 10^{15}, \\
& -u^{14}a^5 + 3u^{14}a^4 + \cdots - 48a - 192, \\
& u^{15} - 3u^{14} + 12u^{13} - 25u^{12} + 52u^{11} - 78u^{10} + 104u^9 - 109u^8 + 94u^7 - 58u^6 + 24u^5 + 2u^4 - 8u^3 + 4u^2 - 1\rangle \\
I_3^u = \langle & 23u^{22} + 100u^{21} + \cdots + 623b - 207,\ -207u^{22} + 1058u^{21} + \cdots + 623a + 1151, \\
& u^{23} - 5u^{22} + \cdots - 2u - 1\rangle \\
I_4^u = \langle & u^3 + b + u,\ u^2 + a + 1,\ u^4 - u^3 + 2u^2 - 2u + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b^3 + b^2 - 1,\ v - 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 5.79\times10^{13}u^{41}+8.69\times10^{14}u^{40}+\cdots+3.53\times10^{13}b-1.32\times10^{16},\ 1.32\times10^{16}u^{41}+1.77\times10^{17}u^{40}+\cdots+1.27\times10^{16}a-8.54\times10^{17},\ u^{42}+15u^{41}+\cdots-7744u-359\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-1.03819u^{41}-13.9330u^{40}+\cdots+1261.90u+67.3681\\-1.63992u^{41}-24.6306u^{40}+\cdots+7972.40u+372.711\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.173456u^{41}+3.15349u^{40}+\cdots-143.162u-6.32280\\-0.551641u^{41}-6.89586u^{40}+\cdots-1335.92u-62.2709\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.601723u^{41}+10.6976u^{40}+\cdots-6710.50u-305.343\\-1.63992u^{41}-24.6306u^{40}+\cdots+7972.40u+372.711\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-1.57357u^{41}-21.8016u^{40}+\cdots-1184.91u-54.6381\\-0.423171u^{41}-8.96377u^{40}+\cdots+7907.19u+366.873\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.557687u^{41}+4.38234u^{40}+\cdots+10797.2u+500.615\\2.74550u^{41}+42.6628u^{40}+\cdots-12062.7u-550.167\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^2+1\\u^4+2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.679616u^{41}+10.3741u^{40}+\cdots-3056.20u-144.610\\-0.584616u^{41}-8.36449u^{40}+\cdots-555.966u-34.1050\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.952487u^{41}-14.7913u^{40}+\cdots+6842.37u+332.671\\0.555898u^{41}+7.29831u^{40}+\cdots-374.764u-12.6868\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{56056292405896}{11765227357099}u^{41} - \frac{807397111618689}{11765227357099}u^{40} + \cdots + \frac{1694366354727177727}{11765227357099}u + \frac{8474387662208614}{11765227357099}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{42} - 32u^{41} + \cdots + 4335u - 359$
c_2, c_{11}	$u^{42} - u^{41} + \cdots + u - 1$
c_3, c_9	$u^{42} - 2u^{41} + \cdots + 2u - 11$
c_4, c_8	$u^{42} - 2u^{41} + \cdots + 4u^2 - 1$
c_5, c_{12}	$u^{42} - 28u^{41} + \cdots + 606208u - 32768$
c_6, c_7, c_{10}	$u^{42} - 15u^{41} + \cdots + 7744u - 359$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{42} - 6y^{41} + \cdots - 5783501y + 128881$
c_2, c_{11}	$y^{42} - 13y^{41} + \cdots - 75y + 1$
c_3, c_9	$y^{42} - 16y^{41} + \cdots - 730y + 121$
c_4, c_8	$y^{42} + 4y^{41} + \cdots - 8y + 1$
c_5, c_{12}	$y^{42} + 26y^{41} + \cdots - 6174015488y + 1073741824$
c_6, c_7, c_{10}	$y^{42} + 47y^{41} + \cdots - 7312852y + 128881$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.847798+0.516810I$ $a=\ \ 0.21167+1.44844I$ $b=\ \ 0.92802+1.11859I$	$-7.3624+15.0662I$	0
$u=-0.847798-0.516810I$ $a=\ \ 0.21167-1.44844I$ $b=\ \ 0.92802-1.11859I$	$-7.3624-15.0662I$	0
$u=-0.561817+0.847271I$ $a=-0.951772-0.095818I$ $b=-0.615905+0.752577I$	$-5.47132-2.16930I$	0
$u=-0.561817-0.847271I$ $a=-0.951772+0.095818I$ $b=-0.615905-0.752577I$	$-5.47132+2.16930I$	0
$u=-0.921261+0.448486I$ $a=-0.465925-0.892200I$ $b=-0.829379-0.612988I$	$-0.78802+9.08376I$	0
$u=-0.921261-0.448486I$ $a=-0.465925+0.892200I$ $b=-0.829379+0.612988I$	$-0.78802-9.08376I$	0
$u=-0.065307+1.026930I$ $a=-0.041167-0.595688I$ $b=-0.614420+0.003374I$	$0.85954-2.83040I$	0
$u=-0.065307-1.026930I$ $a=-0.041167+0.595688I$ $b=-0.614420-0.003374I$	$0.85954+2.83040I$	0
$u=-0.935171+0.033001I$ $a=\ \ 0.871306+0.314755I$ $b=\ \ 0.825208+0.265596I$	$-0.395611-0.511403I$	0
$u=-0.935171-0.033001I$ $a=\ \ 0.871306-0.314755I$ $b=\ \ 0.825208-0.265596I$	$-0.395611+0.511403I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.863179 + 0.646205I$ $a = 0.892421 - 0.309548I$ $b = 0.570288 - 0.843882I$	$-7.03389 - 9.43826I$	0
$u = -0.863179 - 0.646205I$ $a = 0.892421 + 0.309548I$ $b = 0.570288 + 0.843882I$	$-7.03389 + 9.43826I$	0
$u = -0.768224 + 0.348445I$ $a = -0.48288 - 1.60052I$ $b = -0.928655 - 1.061300I$	$-6.91525 + 6.82792I$	0
$u = -0.768224 - 0.348445I$ $a = -0.48288 + 1.60052I$ $b = -0.928655 + 1.061300I$	$-6.91525 - 6.82792I$	0
$u = -0.639526 + 1.087610I$ $a = -0.220347 - 0.414915I$ $b = -0.592182 - 0.025698I$	$0.78066 - 3.14670I$	0
$u = -0.639526 - 1.087610I$ $a = -0.220347 + 0.414915I$ $b = -0.592182 + 0.025698I$	$0.78066 + 3.14670I$	0
$u = 0.730215$ $a = 0.328191$ $b = -0.239650$	-1.55834	-6.81850
$u = 0.006501 + 1.400220I$ $a = 0.797704 - 0.863607I$ $b = -1.21442 - 1.11134I$	$1.79758 + 2.77962I$	0
$u = 0.006501 - 1.400220I$ $a = 0.797704 + 0.863607I$ $b = -1.21442 + 1.11134I$	$1.79758 - 2.77962I$	0
$u = 0.031630 + 1.404990I$ $a = -0.512139 + 0.747941I$ $b = 1.067050 + 0.695895I$	$6.06777 - 0.34397I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.031630 - 1.404990I$ $a = -0.512139 - 0.747941I$ $b = 1.067050 - 0.695895I$	$6.06777 + 0.34397I$	0
$u = 0.134419 + 1.404270I$ $a = 0.353300 - 0.370383I$ $b = -0.567608 - 0.446342I$	$3.34529 - 2.97285I$	0
$u = 0.134419 - 1.404270I$ $a = 0.353300 + 0.370383I$ $b = -0.567608 + 0.446342I$	$3.34529 + 2.97285I$	0
$u = -0.384090 + 0.434645I$ $a = 0.13898 + 1.76739I$ $b = 0.821565 + 0.618429I$	$1.89871 + 1.81111I$	$6.83265 - 3.65343I$
$u = -0.384090 - 0.434645I$ $a = 0.13898 - 1.76739I$ $b = 0.821565 - 0.618429I$	$1.89871 - 1.81111I$	$6.83265 + 3.65343I$
$u = -0.30684 + 1.39651I$ $a = -0.240117 + 0.905515I$ $b = 1.190880 + 0.613178I$	$4.32849 + 3.75468I$	0
$u = -0.30684 - 1.39651I$ $a = -0.240117 - 0.905515I$ $b = 1.190880 - 0.613178I$	$4.32849 - 3.75468I$	0
$u = -0.14396 + 1.47109I$ $a = -0.555100 + 0.872346I$ $b = 1.20339 + 0.94219I$	$8.12729 + 3.81472I$	0
$u = -0.14396 - 1.47109I$ $a = -0.555100 - 0.872346I$ $b = 1.20339 - 0.94219I$	$8.12729 - 3.81472I$	0
$u = -0.27835 + 1.45472I$ $a = 0.617727 - 0.997450I$ $b = -1.27907 - 1.17626I$	$-1.10701 + 10.59690I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.27835-1.45472I$ $a=\ \ 0.617727+0.997450I$ $b=-1.27907+1.17626I$	$-1.10701-10.59690I$	0
$u=-0.42217+1.44605I$ $a=\ \ 0.057955+0.677331I$ $b=\ \ 1.003920+0.202144I$	$4.29609+5.62948I$	0
$u=-0.42217-1.44605I$ $a=\ \ 0.057955-0.677331I$ $b=\ \ 1.003920-0.202144I$	$4.29609-5.62948I$	0
$u=-0.11951+1.54052I$ $a=\ \ 0.295400-0.652375I$ $b=-0.969698-0.533033I$	$8.90977-1.31796I$	0
$u=-0.11951-1.54052I$ $a=\ \ 0.295400+0.652375I$ $b=-0.969698+0.533033I$	$8.90977+1.31796I$	0
$u=-0.32872+1.51631I$ $a=\ \ 0.343559-0.879510I$ $b=-1.22067-0.81006I$	$5.5609+13.5743I$	0
$u=-0.32872-1.51631I$ $a=\ \ 0.343559+0.879510I$ $b=-1.22067+0.81006I$	$5.5609-13.5743I$	0
$u=-0.30503+1.53263I$ $a=-0.601860+0.946634I$ $b=\ \ 1.26726+1.21118I$	$-0.7235+19.2776I$	0
$u=-0.30503-1.53263I$ $a=-0.601860-0.946634I$ $b=\ \ 1.26726-1.21118I$	$-0.7235-19.2776I$	0
$u=-0.127622$ $a=\ \ 5.37111$ $b=\ \ 0.685470$	1.12354	8.71010

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.08288 + 1.90741I$ $a = 0.0065428 + 0.1210950I$ $b = 0.231520 - 0.002443I$	$1.31408 - 4.69007I$	0
$u = -0.08288 - 1.90741I$ $a = 0.0065428 - 0.1210950I$ $b = 0.231520 + 0.002443I$	$1.31408 + 4.69007I$	0

II. $\boldsymbol{I^u_2 = \langle -1.05 \times 10^{13} a^5 u^{14} + 2.29 \times 10^{15} a^4 u^{14} + \cdots - 1.07 \times 10^{15} a - 3.32 \times 10^{15},\ -u^{14} a^5 + 3u^{14} a^4 + \cdots - 48a - 192,\ u^{15} - 3u^{14} + \cdots + 4u^2 - 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a \\ 0.00456179 a^5 u^{14} - 0.997190 a^4 u^{14} + \cdots + 0.467203 a + 1.44268 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a^2 u \\ -0.260599 a^5 u^{14} + 0.246071 a^4 u^{14} + \cdots - 0.281860 a + 0.337798 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00456179 a^5 u^{14} + 0.997190 a^4 u^{14} + \cdots + 0.532797 a - 1.44268 \\ 0.00456179 a^5 u^{14} - 0.997190 a^4 u^{14} + \cdots + 0.467203 a + 1.44268 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.257142 a^5 u^{14} - 0.262044 a^4 u^{14} + \cdots + 0.102646 a + 0.158510 \\ -0.0457117 a^5 u^{14} + 0.0495339 a^4 u^{14} + \cdots - 0.248841 a - 0.00240832 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.217390 a^5 u^{14} + 0.0754889 a^4 u^{14} + \cdots - 0.327262 a + 0.0327779 \\ 0.214887 a^5 u^{14} - 0.196538 a^4 u^{14} + \cdots + 0.0330187 a + 0.659794 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.479143 a^5 u^{14} - 0.504474 a^4 u^{14} + \cdots + 0.989266 a - 0.373754 \\ 0.174477 a^5 u^{14} + 0.378451 a^4 u^{14} + \cdots - 0.811595 a - 0.355396 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0179098 a^5 u^{14} + 0.729168 a^4 u^{14} + \cdots + 0.194326 a - 1.28730 \\ -0.107630 a^5 u^{14} - 0.330844 a^4 u^{14} + \cdots + 0.688844 a + 1.23844 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{395505362197928}{460130783040701} u^{14} a^5 - \frac{1808659394637108}{2300653915203505} u^{14} a^4 + \cdots + \frac{303858281204832}{2300653915203505} a - \frac{16934707989003582}{2300653915203505}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}+7u^{14}+\cdots-4u^2+1)^6$
c_2, c_{11}	$u^{90}-u^{89}+\cdots+18u+1$
c_3, c_9	$u^{90}+u^{89}+\cdots+13305908u+1942847$
c_4, c_8	$u^{90}+u^{89}+\cdots-852u+5809$
c_5, c_{12}	$(u^3+u^2+2u+1)^{30}$
c_6, c_7, c_{10}	$(u^{15}+3u^{14}+\cdots-4u^2+1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15} - y^{14} + \cdots + 8y - 1)^6$
c_2, c_{11}	$y^{90} + 15y^{89} + \cdots + 248y + 1$
c_3, c_9	$y^{90} - 33y^{89} + \cdots - 236967161513892y + 3774654465409$
c_4, c_8	$y^{90} + 35y^{89} + \cdots + 1669082764y + 33744481$
c_5, c_{12}	$(y^3 + 3y^2 + 2y - 1)^{30}$
c_6, c_7, c_{10}	$(y^{15} + 15y^{14} + \cdots + 8y - 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.825834 + 0.538674I$ $a = 0.728895 + 0.432354I$ $b = 0.502288 + 1.061940I$	$-5.79977 + 0.10550I$	$-15.2032 + 5.2409I$
$u = 0.825834 + 0.538674I$ $a = -1.015090 - 0.623772I$ $b = -0.369049 - 0.749690I$	$-5.79977 + 0.10550I$	$-15.2032 + 5.2409I$
$u = 0.825834 + 0.538674I$ $a = 0.102647 - 0.788061I$ $b = 0.310124 - 0.695084I$	$-1.66219 - 2.72262I$	$-8.67392 + 8.22039I$
$u = 0.825834 + 0.538674I$ $a = 0.121700 + 0.762293I$ $b = -0.509278 + 0.595515I$	$-1.66219 - 2.72262I$	$-8.67392 + 8.22039I$
$u = 0.825834 + 0.538674I$ $a = -0.039913 - 1.288130I$ $b = 0.99066 - 1.16606I$	$-5.79977 - 5.55074I$	$-15.2032 + 11.1998I$
$u = 0.825834 + 0.538674I$ $a = -0.19543 + 1.53945I$ $b = -0.660921 + 1.085280I$	$-5.79977 - 5.55074I$	$-15.2032 + 11.1998I$
$u = 0.825834 - 0.538674I$ $a = 0.728895 - 0.432354I$ $b = 0.502288 - 1.061940I$	$-5.79977 - 0.10550I$	$-15.2032 - 5.2409I$
$u = 0.825834 - 0.538674I$ $a = -1.015090 + 0.623772I$ $b = -0.369049 + 0.749690I$	$-5.79977 - 0.10550I$	$-15.2032 - 5.2409I$
$u = 0.825834 - 0.538674I$ $a = 0.102647 + 0.788061I$ $b = 0.310124 + 0.695084I$	$-1.66219 + 2.72262I$	$-8.67392 - 8.22039I$
$u = 0.825834 - 0.538674I$ $a = 0.121700 - 0.762293I$ $b = -0.509278 - 0.595515I$	$-1.66219 + 2.72262I$	$-8.67392 - 8.22039I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.825834 - 0.538674I$ $a = -0.039913 + 1.288130I$ $b = 0.99066 + 1.16606I$	$-5.79977 + 5.55074I$	$-15.2032 - 11.1998I$
$u = 0.825834 - 0.538674I$ $a = -0.19543 - 1.53945I$ $b = -0.660921 - 1.085280I$	$-5.79977 + 5.55074I$	$-15.2032 - 11.1998I$
$u = -0.000696 + 1.255430I$ $a = 0.932334 + 0.293599I$ $b = -1.115540 - 0.135555I$	$1.29235 - 2.53738I$	$0.57441 + 1.72215I$
$u = -0.000696 + 1.255430I$ $a = 0.107483 - 0.888631I$ $b = 0.369240 - 1.170270I$	$1.29235 - 2.53738I$	$0.57441 + 1.72215I$
$u = -0.000696 + 1.255430I$ $a = -0.841704 - 0.169778I$ $b = 2.36969 - 0.27513I$	$-2.84523 - 5.36551I$	$-5.95486 + 4.70160I$
$u = -0.000696 + 1.255430I$ $a = -1.71526 - 0.33087I$ $b = -0.0044633 + 0.1010780I$	$-2.84523 + 0.29074I$	$-5.95486 - 1.25729I$
$u = -0.000696 + 1.255430I$ $a = 0.22020 + 1.88744I$ $b = -0.213730 + 1.056580I$	$-2.84523 - 5.36551I$	$-5.95486 + 4.70160I$
$u = -0.000696 + 1.255430I$ $a = -0.0805146 - 0.0035106I$ $b = -0.41657 + 2.15315I$	$-2.84523 + 0.29074I$	$-5.95486 - 1.25729I$
$u = -0.000696 - 1.255430I$ $a = 0.932334 - 0.293599I$ $b = -1.115540 + 0.135555I$	$1.29235 + 2.53738I$	$0.57441 - 1.72215I$
$u = -0.000696 - 1.255430I$ $a = 0.107483 + 0.888631I$ $b = 0.369240 + 1.170270I$	$1.29235 + 2.53738I$	$0.57441 - 1.72215I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.000696-1.255430I$ $a=-0.841704+0.169778I$ $b=\ 2.36969+0.27513I$	$-2.84523+5.36551I$	$-5.95486-4.70160I$
$u=-0.000696-1.255430I$ $a=-1.71526+0.33087I$ $b=-0.0044633-0.1010780I$	$-2.84523-0.29074I$	$-5.95486+1.25729I$
$u=-0.000696-1.255430I$ $a=\ 0.22020-1.88744I$ $b=-0.213730-1.056580I$	$-2.84523+5.36551I$	$-5.95486-4.70160I$
$u=-0.000696-1.255430I$ $a=-0.0805146+0.0035106I$ $b=-0.41657-2.15315I$	$-2.84523-0.29074I$	$-5.95486+1.25729I$
$u=\ 0.374558+0.641779I$ $a=\ 0.794569-0.748177I$ $b=\ 0.043785+0.842537I$	$-3.35529-0.56859I$	$0.01825+5.21728I$
$u=\ 0.374558+0.641779I$ $a=-1.008960-0.520630I$ $b=-0.777776-0.229702I$	$-3.35529-0.56859I$	$0.01825+5.21728I$
$u=\ 0.374558+0.641779I$ $a=\ 0.122061-0.821834I$ $b=\ 0.680031-0.847450I$	$0.78229-3.39671I$	$6.54752+8.19673I$
$u=\ 0.374558+0.641779I$ $a=\ 0.52368+1.36524I$ $b=-0.573155+0.229488I$	$0.78229-3.39671I$	$6.54752+8.19673I$
$u=\ 0.374558+0.641779I$ $a=-0.05694+1.69423I$ $b=-0.62312+1.42179I$	$-3.35529-6.22484I$	$0.01825+11.17618I$
$u=\ 0.374558+0.641779I$ $a=-1.22984-1.68868I$ $b=\ 1.108650-0.598043I$	$-3.35529-6.22484I$	$0.01825+11.17618I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.374558 - 0.641779I$ $a = 0.794569 + 0.748177I$ $b = 0.043785 - 0.842537I$	$-3.35529 + 0.56859I$	$0.01825 - 5.21728I$
$u = 0.374558 - 0.641779I$ $a = -1.008960 + 0.520630I$ $b = -0.777776 + 0.229702I$	$-3.35529 + 0.56859I$	$0.01825 - 5.21728I$
$u = 0.374558 - 0.641779I$ $a = 0.122061 + 0.821834I$ $b = 0.680031 + 0.847450I$	$0.78229 + 3.39671I$	$6.54752 - 8.19673I$
$u = 0.374558 - 0.641779I$ $a = 0.52368 - 1.36524I$ $b = -0.573155 - 0.229488I$	$0.78229 + 3.39671I$	$6.54752 - 8.19673I$
$u = 0.374558 - 0.641779I$ $a = -0.05694 - 1.69423I$ $b = -0.62312 - 1.42179I$	$-3.35529 + 6.22484I$	$0.01825 - 11.17618I$
$u = 0.374558 - 0.641779I$ $a = -1.22984 + 1.68868I$ $b = 1.108650 + 0.598043I$	$-3.35529 + 6.22484I$	$0.01825 - 11.17618I$
$u = 0.678314$ $a = 0.656234 + 1.097420I$ $b = 1.01936 + 1.23185I$	$-5.68548 + 2.82812I$	$-12.78167 - 2.97945I$
$u = 0.678314$ $a = 0.656234 - 1.097420I$ $b = 1.01936 - 1.23185I$	$-5.68548 - 2.82812I$	$-12.78167 + 2.97945I$
$u = 0.678314$ $a = 0.364150 + 0.321172I$ $b = -0.247008 + 0.217856I$	-1.54789	$-6.25241 + 0.I$
$u = 0.678314$ $a = 0.364150 - 0.321172I$ $b = -0.247008 - 0.217856I$	-1.54789	$-6.25241 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.678314$ $a = -1.50278 + 1.81605I$ $b = -0.445133 + 0.744393I$	$-5.68548 - 2.82812I$	$-12.78167 + 2.97945I$
$u = 0.678314$ $a = -1.50278 - 1.81605I$ $b = -0.445133 - 0.744393I$	$-5.68548 + 2.82812I$	$-12.78167 - 2.97945I$
$u = -0.100337 + 1.375660I$ $a = 0.879754 - 0.273487I$ $b = -2.00005 - 0.72017I$	$-1.34732 + 2.76738I$	$-2.84025 - 4.81401I$
$u = -0.100337 + 1.375660I$ $a = -1.326590 - 0.261883I$ $b = 0.806358 + 0.151417I$	$2.79026 + 5.59550I$	$3.68902 - 7.79345I$
$u = -0.100337 + 1.375660I$ $a = -0.066960 + 0.591047I$ $b = -0.49337 + 1.79865I$	$2.79026 + 5.59550I$	$3.68902 - 7.79345I$
$u = -0.100337 + 1.375660I$ $a = 0.41526 - 1.48418I$ $b = -0.287951 - 1.237680I$	$-1.34732 + 2.76738I$	$-2.84025 - 4.81401I$
$u = -0.100337 + 1.375660I$ $a = 0.0506988 - 0.0596810I$ $b = 1.63740 - 2.49979I$	$-1.34732 + 8.42362I$	$-2.84025 - 10.77290I$
$u = -0.100337 + 1.375660I$ $a = 1.89390 + 1.05214I$ $b = -0.0770134 - 0.0757322I$	$-1.34732 + 8.42362I$	$-2.84025 - 10.77290I$
$u = -0.100337 - 1.375660I$ $a = 0.879754 + 0.273487I$ $b = -2.00005 + 0.72017I$	$-1.34732 - 2.76738I$	$-2.84025 + 4.81401I$
$u = -0.100337 - 1.375660I$ $a = -1.326590 + 0.261883I$ $b = 0.806358 - 0.151417I$	$2.79026 - 5.59550I$	$3.68902 + 7.79345I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.100337-1.375660I$ $a=-0.066960-0.591047I$ $b=-0.49337-1.79865I$	$2.79026-5.59550I$	$3.68902+7.79345I$
$u=-0.100337-1.375660I$ $a=\quad 0.41526+1.48418I$ $b=-0.287951+1.237680I$	$-1.34732-2.76738I$	$-2.84025+4.81401I$
$u=-0.100337-1.375660I$ $a=\quad 0.0506988+0.0596810I$ $b=\quad 1.63740+2.49979I$	$-1.34732-8.42362I$	$-2.84025+10.77290I$
$u=-0.100337-1.375660I$ $a=\quad 1.89390-1.05214I$ $b=-0.0770134+0.0757322I$	$-1.34732-8.42362I$	$-2.84025+10.77290I$
$u=\quad 0.15235+1.51729I$ $a=\quad 0.540617+0.954858I$ $b=-0.727117+0.596502I$	$7.78915-5.47678I$	$11.31764+5.38780I$
$u=\quad 0.15235+1.51729I$ $a=\quad 0.415408+0.703417I$ $b=-1.38278+1.79749I$	$3.65157-8.30490I$	$4.78838+8.36725I$
$u=\quad 0.15235+1.51729I$ $a=\quad 0.088559-0.754678I$ $b=\quad 0.051094-0.182246I$	$3.65157-2.64865I$	$4.78838+2.40836I$
$u=\quad 0.15235+1.51729I$ $a=-0.341574-0.513517I$ $b=\quad 1.36644-0.96575I$	$7.78915-5.47678I$	$11.31764+5.38780I$
$u=\quad 0.15235+1.51729I$ $a=-1.08225-1.02001I$ $b=\quad 1.004000-0.737461I$	$3.65157-8.30490I$	$4.78838+8.36725I$
$u=\quad 0.15235+1.51729I$ $a=\quad 0.1155660+0.0452784I$ $b=-1.158560-0.019395I$	$3.65157-2.64865I$	$4.78838+2.40836I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.15235 - 1.51729I$ $a = 0.540617 - 0.954858I$ $b = -0.727117 - 0.596502I$	$7.78915 + 5.47678I$	$11.31764 - 5.38780I$
$u = 0.15235 - 1.51729I$ $a = 0.415408 - 0.703417I$ $b = -1.38278 - 1.79749I$	$3.65157 + 8.30490I$	$4.78838 - 8.36725I$
$u = 0.15235 - 1.51729I$ $a = 0.088559 + 0.754678I$ $b = 0.051094 + 0.182246I$	$3.65157 + 2.64865I$	$4.78838 - 2.40836I$
$u = 0.15235 - 1.51729I$ $a = -0.341574 + 0.513517I$ $b = 1.36644 + 0.96575I$	$7.78915 + 5.47678I$	$11.31764 - 5.38780I$
$u = 0.15235 - 1.51729I$ $a = -1.08225 + 1.02001I$ $b = 1.004000 + 0.737461I$	$3.65157 + 8.30490I$	$4.78838 - 8.36725I$
$u = 0.15235 - 1.51729I$ $a = 0.1155660 - 0.0452784I$ $b = -1.158560 + 0.019395I$	$3.65157 + 2.64865I$	$4.78838 - 2.40836I$
$u = 0.29798 + 1.53037I$ $a = -0.691431 - 0.746805I$ $b = 1.41243 - 1.09797I$	$0.89067 - 9.67569I$	$-4.51522 + 13.25390I$
$u = 0.29798 + 1.53037I$ $a = 0.518104 + 1.023810I$ $b = -0.93686 + 1.28068I$	$0.89067 - 9.67569I$	$-4.51522 + 13.25390I$
$u = 0.29798 + 1.53037I$ $a = 0.488342 + 0.660116I$ $b = -1.024940 + 0.650833I$	$5.02825 - 6.84757I$	$2.01405 + 10.27446I$
$u = 0.29798 + 1.53037I$ $a = -0.284102 - 0.725051I$ $b = 0.864709 - 0.944047I$	$5.02825 - 6.84757I$	$2.01405 + 10.27446I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.29798 + 1.53037I$ $a = -0.409487 - 0.288961I$ $b = 0.217124 - 0.213845I$	$0.89067 - 4.01945I$	$-4.51522 + 7.29501I$
$u = 0.29798 + 1.53037I$ $a = 0.108014 + 0.162908I$ $b = -0.320199 + 0.712773I$	$0.89067 - 4.01945I$	$-4.51522 + 7.29501I$
$u = 0.29798 - 1.53037I$ $a = -0.691431 + 0.746805I$ $b = 1.41243 + 1.09797I$	$0.89067 + 9.67569I$	$-4.51522 - 13.25390I$
$u = 0.29798 - 1.53037I$ $a = 0.518104 - 1.023810I$ $b = -0.93686 - 1.28068I$	$0.89067 + 9.67569I$	$-4.51522 - 13.25390I$
$u = 0.29798 - 1.53037I$ $a = 0.488342 - 0.660116I$ $b = -1.024940 - 0.650833I$	$5.02825 + 6.84757I$	$2.01405 - 10.27446I$
$u = 0.29798 - 1.53037I$ $a = -0.284102 + 0.725051I$ $b = 0.864709 + 0.944047I$	$5.02825 + 6.84757I$	$2.01405 - 10.27446I$
$u = 0.29798 - 1.53037I$ $a = -0.409487 + 0.288961I$ $b = 0.217124 + 0.213845I$	$0.89067 + 4.01945I$	$-4.51522 - 7.29501I$
$u = 0.29798 - 1.53037I$ $a = 0.108014 - 0.162908I$ $b = -0.320199 - 0.712773I$	$0.89067 + 4.01945I$	$-4.51522 - 7.29501I$
$u = -0.388845 + 0.104061I$ $a = 0.69147 - 1.47342I$ $b = 1.64496 - 1.23122I$	$-6.09804 + 6.75772I$	$-13.2254 - 10.9670I$
$u = -0.388845 + 0.104061I$ $a = 0.72962 + 1.93595I$ $b = -0.569102 + 1.008450I$	$-1.96046 + 3.92960I$	$-6.69617 - 7.98755I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.388845 + 0.104061I$ $a = -0.23948 - 2.17125I$ $b = -1.24632 - 1.22239I$	$-6.09804 + 1.10148I$	$-13.22544 - 5.00810I$
$u = -0.388845 + 0.104061I$ $a = -2.01341 + 2.05462I$ $b = 0.485166 + 0.676861I$	$-1.96046 + 3.92960I$	$-6.69617 - 7.98755I$
$u = -0.388845 + 0.104061I$ $a = -2.20591 - 3.73398I$ $b = -0.319063 - 0.819358I$	$-6.09804 + 1.10148I$	$-13.22544 - 5.00810I$
$u = -0.388845 + 0.104061I$ $a = 4.73838 - 1.89829I$ $b = 0.115549 - 0.644888I$	$-6.09804 + 6.75772I$	$-13.2254 - 10.9670I$
$u = -0.388845 - 0.104061I$ $a = 0.69147 + 1.47342I$ $b = 1.64496 + 1.23122I$	$-6.09804 - 6.75772I$	$-13.2254 + 10.9670I$
$u = -0.388845 - 0.104061I$ $a = 0.72962 - 1.93595I$ $b = -0.569102 - 1.008450I$	$-1.96046 - 3.92960I$	$-6.69617 + 7.98755I$
$u = -0.388845 - 0.104061I$ $a = -0.23948 + 2.17125I$ $b = -1.24632 + 1.22239I$	$-6.09804 - 1.10148I$	$-13.22544 + 5.00810I$
$u = -0.388845 - 0.104061I$ $a = -2.01341 - 2.05462I$ $b = 0.485166 - 0.676861I$	$-1.96046 - 3.92960I$	$-6.69617 + 7.98755I$
$u = -0.388845 - 0.104061I$ $a = -2.20591 + 3.73398I$ $b = -0.319063 + 0.819358I$	$-6.09804 - 1.10148I$	$-13.22544 + 5.00810I$
$u = -0.388845 - 0.104061I$ $a = 4.73838 + 1.89829I$ $b = 0.115549 + 0.644888I$	$-6.09804 - 6.75772I$	$-13.2254 + 10.9670I$

III. $I^u_3 = \langle 23u^{22} + 100u^{21} + \cdots + 623b - 207,\ -207u^{22} + 1058u^{21} + \cdots + 623a + 1151,\ u^{23} - 5u^{22} + \cdots - 2u - 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.332263u^{22} - 1.69823u^{21} + \cdots - 9.49599u - 1.84751 \\ -0.0369181u^{22} - 0.160514u^{21} + \cdots - 1.18299u + 0.332263 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.179775u^{22} + 0.125201u^{21} + \cdots - 5.89727u + 3.18941 \\ -0.773676u^{22} + 3.60514u^{21} + \cdots + 3.82986u - 0.179775 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.369181u^{22} - 1.53772u^{21} + \cdots - 8.31300u - 2.17978 \\ -0.0369181u^{22} - 0.160514u^{21} + \cdots - 1.18299u + 0.332263 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.47352u^{22} + 7.81701u^{21} + \cdots + 0.311396u + 2.69021 \\ 0.186196u^{22} - 0.792937u^{21} + \cdots - 2.98395u - 2.24719 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0963082u^{22} - 0.301766u^{21} + \cdots + 7.49599u - 3.58106 \\ 0.581059u^{22} - 2.71589u^{21} + \cdots - 2.53612u + 1.05618 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.19101u^{22} - 5.72231u^{21} + \cdots - 15.8234u + 2.13804 \\ -0.290530u^{22} + 0.929374u^{21} + \cdots + 5.83949u + 0.900482 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.812199u^{22} - 3.18299u^{21} + \cdots - 8.68860u - 2.59551 \\ 0.0513644u^{22} - 1.05618u^{21} + \cdots - 0.764045u + 0.252006 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{199}{623}u^{22} + \frac{223}{89}u^{21} + \cdots - \frac{189}{89}u - \frac{1502}{623}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{23} - 8u^{22} + \cdots + 2u + 1$
c_2, c_{11}	$u^{23} + 2u^{22} + \cdots + u + 1$
c_3, c_9	$u^{23} - 2u^{22} + \cdots + 21u - 5$
c_4, c_8	$u^{23} + 3u^{22} + \cdots - 2u - 1$
c_5	$u^{23} - 3u^{22} + \cdots + 5u - 1$
c_6, c_7	$u^{23} - 5u^{22} + \cdots - 2u - 1$
c_{10}	$u^{23} + 5u^{22} + \cdots - 2u + 1$
c_{12}	$u^{23} + 3u^{22} + \cdots + 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{23} - 6y^{22} + \cdots + 14y - 1$
c_2, c_{11}	$y^{23} + 2y^{22} + \cdots - 19y - 1$
c_3, c_9	$y^{23} - 8y^{22} + \cdots + 131y - 25$
c_4, c_8	$y^{23} + 11y^{22} + \cdots + 18y - 1$
c_5, c_{12}	$y^{23} + 23y^{22} + \cdots - 25y - 1$
c_6, c_7, c_{10}	$y^{23} + 29y^{22} + \cdots + 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.981681$ $a = 0.779029$ $b = 0.764758$	-0.689716	-2.06440
$u = 0.046703 + 0.930712I$ $a = -0.684416 - 0.366896I$ $b = 0.309510 - 0.654129I$	$-0.50604 - 3.37221I$	$-3.10488 + 5.47089I$
$u = 0.046703 - 0.930712I$ $a = -0.684416 + 0.366896I$ $b = 0.309510 + 0.654129I$	$-0.50604 + 3.37221I$	$-3.10488 - 5.47089I$
$u = 0.341190 + 0.855994I$ $a = -0.529435 - 0.592181I$ $b = 0.326265 - 0.655239I$	$-0.46996 - 3.38317I$	$-3.76274 + 7.75674I$
$u = 0.341190 - 0.855994I$ $a = -0.529435 + 0.592181I$ $b = 0.326265 + 0.655239I$	$-0.46996 + 3.38317I$	$-3.76274 - 7.75674I$
$u = 0.742167 + 0.496463I$ $a = -0.09108 + 1.53322I$ $b = -0.828784 + 1.092690I$	$-5.14269 - 5.20984I$	$-2.27770 + 4.55051I$
$u = 0.742167 - 0.496463I$ $a = -0.09108 - 1.53322I$ $b = -0.828784 - 1.092690I$	$-5.14269 + 5.20984I$	$-2.27770 - 4.55051I$
$u = 0.038578 + 1.321770I$ $a = 0.866874 + 0.821907I$ $b = -1.05293 + 1.17751I$	$-1.84794 - 1.28014I$	$-3.86484 + 0.35849I$
$u = 0.038578 - 1.321770I$ $a = 0.866874 - 0.821907I$ $b = -1.05293 - 1.17751I$	$-1.84794 + 1.28014I$	$-3.86484 - 0.35849I$
$u = -0.052420 + 1.377800I$ $a = -0.882813 - 0.778988I$ $b = 1.11957 - 1.17550I$	$-1.09614 + 7.15051I$	$-0.40535 - 3.22010I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.052420 - 1.377800I$ $a = -0.882813 + 0.778988I$ $b = 1.11957 + 1.17550I$	$-1.09614 - 7.15051I$	$-0.40535 + 3.22010I$
$u = 0.193105 + 0.487515I$ $a = -1.84547 + 0.45535I$ $b = -0.578363 - 0.811763I$	$-5.21658 + 0.59793I$	$-4.49708 - 0.02117I$
$u = 0.193105 - 0.487515I$ $a = -1.84547 - 0.45535I$ $b = -0.578363 + 0.811763I$	$-5.21658 - 0.59793I$	$-4.49708 + 0.02117I$
$u = 0.37598 + 1.46502I$ $a = -0.106547 - 0.671685I$ $b = 0.943975 - 0.408637I$	$4.28074 - 4.94018I$	$1.44473 + 3.42248I$
$u = 0.37598 - 1.46502I$ $a = -0.106547 + 0.671685I$ $b = 0.943975 + 0.408637I$	$4.28074 + 4.94018I$	$1.44473 - 3.42248I$
$u = 0.16604 + 1.50759I$ $a = -0.538274 - 0.673639I$ $b = 0.926195 - 0.923344I$	$6.65222 - 5.57707I$	$2.37187 + 5.82519I$
$u = 0.16604 - 1.50759I$ $a = -0.538274 + 0.673639I$ $b = 0.926195 + 0.923344I$	$6.65222 + 5.57707I$	$2.37187 - 5.82519I$
$u = 0.26815 + 1.51790I$ $a = 0.628490 + 0.885531I$ $b = -1.17562 + 1.19144I$	$1.41586 - 8.92546I$	$1.49885 + 4.00660I$
$u = 0.26815 - 1.51790I$ $a = 0.628490 - 0.885531I$ $b = -1.17562 - 1.19144I$	$1.41586 + 8.92546I$	$1.49885 - 4.00660I$
$u = -0.171277 + 0.117996I$ $a = -0.82086 - 5.18268I$ $b = 0.752128 + 0.790816I$	$-5.51473 - 6.41401I$	$-0.58882 + 3.55203I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.171277 - 0.117996I$ $a = -0.82086 + 5.18268I$ $b = 0.752128 - 0.790816I$	$-5.51473 + 6.41401I$	$-0.58882 - 3.55203I$
$u = 0.06095 + 1.87112I$ $a = 0.1140130 + 0.0701550I$ $b = -0.124320 + 0.217608I$	$1.21038 - 4.74670I$	$-17.7818 + 31.4853I$
$u = 0.06095 - 1.87112I$ $a = 0.1140130 - 0.0701550I$ $b = -0.124320 - 0.217608I$	$1.21038 + 4.74670I$	$-17.7818 - 31.4853I$

IV. $\boldsymbol{I_4^u = \langle u^3 + b + u,\ u^2 + a + 1,\ u^4 - u^3 + 2u^2 - 2u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 - 1 \\ -u^3 - u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^3 + 2u - 1 \\ u^3 + 2u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^3 - u^2 + u - 1 \\ -u^3 - u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 - u^2 + u - 1 \\ u^3 - u^2 + u - 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u - 1 \\ -u^3 - u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^3 + 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^3 + 2u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^2 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^3 - 2u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^4 - 3u^3 + 5u^2 - 3u + 1$
c_2, c_4, c_8 c_{11}	$(u^2 - u + 1)^2$
c_3, c_9	$u^4 + u^3 - u^2 - u + 1$
c_5, c_{10}	$u^4 + u^3 + 2u^2 + 2u + 1$
c_6, c_7, c_{12}	$u^4 - u^3 + 2u^2 - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^4 + y^3 + 9y^2 + y + 1$
c_2, c_4, c_8 c_{11}	$(y^2 + y + 1)^2$
c_3, c_9	$y^4 - 3y^3 + 5y^2 - 3y + 1$
c_5, c_6, c_7 c_{10}, c_{12}	$y^4 + 3y^3 + 2y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621744 + 0.440597I$ $a = -1.192440 - 0.547877I$ $b = -0.500000 - 0.866025I$	$-5.03685 + 0.56550I$	$-4.36523 - 0.45577I$
$u = 0.621744 - 0.440597I$ $a = -1.192440 + 0.547877I$ $b = -0.500000 + 0.866025I$	$-5.03685 - 0.56550I$	$-4.36523 + 0.45577I$
$u = -0.121744 + 1.306620I$ $a = 0.692440 + 0.318148I$ $b = -0.500000 + 0.866025I$	$1.74699 + 4.62527I$	$-2.13477 - 4.78589I$
$u = -0.121744 - 1.306620I$ $a = 0.692440 - 0.318148I$ $b = -0.500000 - 0.866025I$	$1.74699 - 4.62527I$	$-2.13477 + 4.78589I$

V. $I_1^v = \langle a,\ b^3 + b^2 - 1,\ v - 1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -b^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -b \\ b \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -b^2 + 1 \\ b^2 + b - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} b \\ -b \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} b^2 + 1 \\ -b^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4b + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_{10}	u^3
c_2, c_3, c_4 c_8, c_9, c_{11}	$u^3 + u^2 - 1$
c_5, c_{12}	$u^3 - u^2 + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_7 c_{10}	y^3
c_2, c_3, c_4 c_8, c_9, c_{11}	$y^3 - y^2 + 2y - 1$
c_5, c_{12}	$y^3 + 3y^2 + 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -0.877439 + 0.744862I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$v = 1.00000$ $a = 0$ $b = -0.877439 - 0.744862I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$v = 1.00000$ $a = 0$ $b = 0.754878$	1.11345	9.01950

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^3(u^4-3u^3+\cdots-3u+1)(u^{15}+7u^{14}+\cdots-4u^2+1)^6$ $\cdot(u^{23}-8u^{22}+\cdots+2u+1)(u^{42}-32u^{41}+\cdots+4335u-359)$
c_2, c_{11}	$((u^2-u+1)^2)(u^3+u^2-1)(u^{23}+2u^{22}+\cdots+u+1)$ $\cdot(u^{42}-u^{41}+\cdots+u-1)(u^{90}-u^{89}+\cdots+18u+1)$
c_3, c_9	$(u^3+u^2-1)(u^4+u^3-u^2-u+1)(u^{23}-2u^{22}+\cdots+21u-5)$ $\cdot(u^{42}-2u^{41}+\cdots+2u-11)(u^{90}+u^{89}+\cdots+1.33059\times10^7u+1942847)$
c_4, c_8	$((u^2-u+1)^2)(u^3+u^2-1)(u^{23}+3u^{22}+\cdots-2u-1)$ $\cdot(u^{42}-2u^{41}+\cdots+4u^2-1)(u^{90}+u^{89}+\cdots-852u+5809)$
c_5	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^{30}(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{23}-3u^{22}+\cdots+5u-1)(u^{42}-28u^{41}+\cdots+606208u-32768)$
c_6, c_7	$u^3(u^4-u^3+2u^2-2u+1)(u^{15}+3u^{14}+\cdots-4u^2+1)^6$ $\cdot(u^{23}-5u^{22}+\cdots-2u-1)(u^{42}-15u^{41}+\cdots+7744u-359)$
c_{10}	$u^3(u^4+u^3+2u^2+2u+1)(u^{15}+3u^{14}+\cdots-4u^2+1)^6$ $\cdot(u^{23}+5u^{22}+\cdots-2u+1)(u^{42}-15u^{41}+\cdots+7744u-359)$
c_{12}	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^{30}(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{23}+3u^{22}+\cdots+5u+1)(u^{42}-28u^{41}+\cdots+606208u-32768)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^3(y^4+y^3+9y^2+y+1)(y^{15}-y^{14}+\cdots+8y-1)^6$ $\cdot(y^{23}-6y^{22}+\cdots+14y-1)(y^{42}-6y^{41}+\cdots-5783501y+128881)$
c_2, c_{11}	$((y^2+y+1)^2)(y^3-y^2+2y-1)(y^{23}+2y^{22}+\cdots-19y-1)$ $\cdot(y^{42}-13y^{41}+\cdots-75y+1)(y^{90}+15y^{89}+\cdots+248y+1)$
c_3, c_9	$(y^3-y^2+2y-1)(y^4-3y^3+\cdots-3y+1)(y^{23}-8y^{22}+\cdots+131y-25)$ $\cdot(y^{42}-16y^{41}+\cdots-730y+121)$ $\cdot(y^{90}-33y^{89}+\cdots-236967161513892y+3774654465409)$
c_4, c_8	$((y^2+y+1)^2)(y^3-y^2+2y-1)(y^{23}+11y^{22}+\cdots+18y-1)$ $\cdot(y^{42}+4y^{41}+\cdots-8y+1)$ $\cdot(y^{90}+35y^{89}+\cdots+1669082764y+33744481)$
c_5, c_{12}	$((y^3+3y^2+2y-1)^{31})(y^4+3y^3+2y^2+1)(y^{23}+23y^{22}+\cdots-25y-1)$ $\cdot(y^{42}+26y^{41}+\cdots-6174015488y+1073741824)$
c_6, c_7, c_{10}	$y^3(y^4+3y^3+2y^2+1)(y^{15}+15y^{14}+\cdots+8y-1)^6$ $\cdot(y^{23}+29y^{22}+\cdots+4y-1)(y^{42}+47y^{41}+\cdots-7312852y+128881)$